

Gaps in Depression Care: Why Primary Care Physicians Should Hone Their Depression Screening, Diagnosis, and Management Skills

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Objective: To highlight the potential role that occupational and environmental physicians can play in providing high quality depression care by describing: the profound impact that depression can have on development and persistence of unexplained medical symptoms such as pain; the impact of depression on social and occupational functioning; the adverse effect of comorbid depression in patients with chronic medical illness on self-care and medical outcomes; and the significant direct and indirect costs associated with depression. **Method:** Literature review. **Results:** Despite evidence-based treatment guidelines, suboptimal depression care persists. **Conclusions:** Building on the tenets of the chronic illness care model as well as the principles of public health, three approaches are required to address the gaps between knowledge and practice: 1) improve accuracy of diagnosis; 2) prevent chronic depression; and 3) prevent relapse and recurrence. (J Occup Environ Med. 2008;50:451–458)

Several different infectious conditions and a handful of autoimmune diseases have been described as “the great masquerader” over the past several decades. Because depression represents the third leading cause of disability worldwide (according to the World Health Organization),^{1,2} frequently leads to patients presenting with physical symptoms (ie, fatigue and pain),³ contributes to poor disease control in patients with chronic medical illnesses,^{4–6} and complicates the presentation and management of chronic pain,^{7–10} we propose that depression should be considered a contender for this dubious honor. Despite a plethora of high quality efficacy and effectiveness studies and implementation of demonstration projects that have established that primary care patients with depression can be treated with cost-effective interventions within primary care settings, the accuracy of diagnosis and quality of care for many primary care patients with depression remains suboptimal.¹¹ Consequently, the health care system, employers, health plans, and consumer advocates have sought to identify patient, physician, organizational, and other factors that contribute to gaps in the quality of depression care and the changes that need to be implemented in primary care systems to improve depression-related outcomes of care.

Although historically the purview of mental health specialists, depression care is increasingly being delivered by nonmental health physicians.

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DOI: 10.1097/JOM.0b013e318169cce4

To highlight the role that occupational and environmental physicians can play in providing high quality depression care, this article will describe the profound impact that depression can have on development and persistence of unexplained medical symptoms such as pain; the impact of depression on social and occupational functioning; the adverse effect of comorbid depression in patients with chronic medical illness on self-care (adherence to diet, exercise, taking medication as prescribed) and medical outcomes; and the significant direct and indirect costs associated with depression. This article will also describe key gaps in quality of depression care. In the following article, we will present an evidence-based public health model of chronic illness care that has been demonstrated to improve the quality of depression care and depression outcomes for the population of primary care patients with major depression.

Clinical Presentation

Physical Symptoms of Depression

Somatization has been defined as physical symptoms appearing in patients who do not have proportional tissue abnormalities. These medical symptoms (eg, fatigue and pain) without identified pathology account for the majority of health care visits and have been associated with many psychosocial factors, including depression and anxiety.³ Approximately 50% to 80% of patients with depression present with minor physical symptoms such as chief complaints of headaches, fatigue, abdominal pain, constipation, diarrhea, or diffuse aches and pains. In the Work and Health Interview, a computer-assisted telephone interview designed to capture data on health-related work absence and reduced work performance, patients with depression reported the following physical symptoms pain, weakness, or fatigue (49%); sensory or nerve impairment (40%); and ringing ears or head full-

ness (38%).¹² The number of medical symptoms without identified pathology has been identified to be a reliable indicator of the degree of psychological distress and functional impairment as well as the duration of impairment.^{3,13-15} In the Epidemiological Catchment Area study, 50% of community respondents who reported health care consultations for five or more medically unexplained symptoms over the preceding 6 months were found to have with one or more psychiatric disorders.¹⁶

When controlling for severity of medical comorbidity, patients with depression and anxiety have an increased number of physical symptoms or a heightened sensitivity to physical symptoms compared with patients without affective illness.³ For example, after controlling for level of glycosylated hemoglobin (Hb_{A1c}), a form of hemoglobin used to monitor average plasma glucose concentration over the preceding 3 months, and diabetes complications, patients with diabetes and comorbid anxiety and depression demonstrated significantly more of 13 symptoms associated with poor glycemic control (eg, polyphagia and polydipsia) than patients with diabetes and no psychiatric comorbidities.¹⁷ Likewise, after adjusting for severity of disease documented by angiography and cardiac procedures, patients with documented coronary artery disease and comorbid anxiety and depression suffered from greater levels of cardiac symptoms and functional impairment than patients without psychiatric comorbidities.¹⁸ Patients with inflammatory bowel disease and comorbid anxiety and depression reported higher levels of gastrointestinal symptoms, nongastrointestinal symptoms, and functional impairment compared with those with inflammatory bowel disease alone after controlling for severity of this gastrointestinal illness.¹⁹ The key message in all of these studies is that both physical disease and psychological distress produce physical symptoms. Evaluation and management strategies that assume

otherwise fail to appreciate the epidemiology of chronic illness and comorbid psychiatric illness and ultimately contribute to suboptimal health-related quality of life and disease outcomes.³

Depression and Comorbid Chronic Medical Illnesses

Patients with chronic medical illnesses suffer from a higher prevalence of depression than patients without chronic illness and this comorbidity appears to contribute to poor medical outcomes, which, in part, explains these patients' greater number of physical symptoms.^{20,21} For example, in a meta-analysis that included 27 studies (total combined $N = 5374$) researchers reported a significant association between depression and complications of diabetes, including diabetic retinopathy, nephropathy, neuropathy, macrovascular complications, and sexual dysfunction ($P < 0.01$).²² Most of these studies were cross-sectional, so it is unclear whether depression contributed to the increased complications or vice versa. However, longitudinal studies provide support for the potential causal role of depression with increased complications. A large, longitudinal study of community dwelling elderly showed that depression in patients with diabetes was associated with a significantly higher risk of macrovascular complications and mortality.²³ Similarly, in a naturalistic follow-up study of patients admitted for an acute myocardial infarction, controlling for baseline cardiac status and sociodemographic characteristics, patients with depression demonstrated a significantly higher risk for a new cardiovascular events compared with subjects without depressive symptoms (hazard ratio (HR) = 2.46; $P = 0.03$).²⁴

The mechanism explaining the observed poorer outcomes in patients with depression and other chronic medical illness remains unclear. Evidence supports contributions by both poor adherence to medications and unhealthy lifestyle. A recent

study of over 4000 patients with diabetes enrolled in an HMO demonstrated that patients with comorbid depression compared with those with diabetes alone had poorer adherence to diet, exercise, and cessation of smoking recommendations as well as significantly more lapses in taking oral hypoglycemic, antihypertensive, and lipid lowering medications.⁴ Studies of patients with heart disease and diabetes have reported that comorbid depression increases the risk of death by at least 2-fold. In a prospective observational cohort study of more than 500 patients enrolled within 7 days after acute coronary syndrome, compared with patients without depression, persistently depressed patients reported lower rates of adherence to quitting smoking (adjusted odds ratio [OR] 0.23, 95% confidence interval [95% CI] = 0.05–0.97), taking medications (adjusted OR 0.50, 95% CI = 0.27–0.95), exercising (adjusted OR 0.57, 95% CI = 0.34–0.95), and attending cardiac rehabilitation (adjusted OR 0.5, 95% CI = 0.27–0.91).⁵ Researchers also have speculated that the biologic effects of depression on increasing inflammatory markers, altering endothelial functioning, increasing platelet adhesiveness, and increasing sympathoadrenal arousal may also contribute to the risk of complications and mortality seen in patients with heart disease and diabetes.⁶

Depression, Chronic Pain, and Disability

Longitudinal studies have shown bidirectional interactions between pain and disability.⁶ Depression earlier in life is a risk factor for the development of chronic pain and chronic pain is a risk factor for the development of depression.^{7–10,25} Regardless of which problem presents first, comorbid pain and depression are associated with additive functional impairment.^{26–29} Like patients with medical illnesses, patients with chronic work-related musculoskeletal pain often also suffer from

psychiatric conditions, including depression, that contribute to poor outcomes, particularly in terms of long-term disability.^{30,31} In a cohort of patients on disability due to work-related chronic musculoskeletal pain who started a prescribed course of tertiary rehabilitation ($n = 1595$), a majority (64%) met Diagnostic and Statistical Manual of Mental Disorders criteria for at least one disorder, compared with only 15% of the general population.³⁰ Although more than one-third of study patients had at least one preinjury axis I diagnosis, the disproportionate rates of psychiatric disorders observed in study subjects compared with the general population were not detected until after the study subjects sustained a musculoskeletal injury. Consequently, screening patients with chronic work-related musculoskeletal pain for psychiatric disorders is essential. Because evidence is accumulating that depression is an independent risk factor of work disability, failure to diagnose and treat psychiatric comorbidities in these patients will likely contribute to prolonged pain-related disability.^{32,33}

Economic Burden: Direct and Indirect Costs of Depression

Health care economists and policy makers attribute significant health care costs to depression as a result of the high prevalence of the condition; the great number of associated physical symptoms, and the heightened sensitivity to these symptoms; the negative impact of the condition on patients' abilities to engage in effective self-care of chronic illness; the prevalence of pain-related disability secondary to depression; and inadequate treatment of the condition. After adjusting for having other chronic illnesses, patients with depression incur approximately two times the health care costs of age and sex-matched patients without depression.³⁴ Medical costs are increased in every component of care, including ambulatory primary, medical spe-

cialty, and mental health care; hospital-based care; emergency department care; laboratory testing; and radiographic imaging studies.

As a result of decreases in productivity and increases in absenteeism, health care economists also estimate that the indirect costs (ie, family- and job-related costs) of depression are even higher than the associated direct medical costs.³⁵ A systematic review of the cost of depression that included 24 studies, adjusted to 2003 dollars, estimated that the average annual costs per case of depression ranged from \$1000 to \$2500 for direct medical costs and from \$2000 to \$3700 for total morbidity costs.³⁶

In the Work and Health Interview described earlier, employees with depression reported significantly more total health-related lost productive time than those without depression (mean, 5.6 hr/wk vs an expected value of 1.5 hr/wk in the absence of depression) More than three-quarters of employees with depression reported at least some loss in productive time in a given 2-week period, the majority of which could be attributed to presenteeism—reduced performance while at work.¹² These investigators estimated that US workers with depression employed in the previous week cost employers an estimated \$44 billion per year in lost productive time, an excess of \$31 billion per year compared with peers without depression. This estimate did not reflect costs that are also associated with short- and long-term disability. Consequently, the researchers concluded that improving depression-related outcomes in the US workforce likely represents a reasonable return on investment opportunity for many employers.¹²

Similarly, in a longitudinal observational study that compared work productivity in patients with major depressive disorder or dysthymia, workers with rheumatoid arthritis, and depression-free healthy control subjects, patients with depression demonstrated greater deficits in managing mental-interpersonal, time,

and output tasks compared with those with rheumatoid arthritis and healthy controls.³⁷ Additional evidence comes from the National Comorbidity Survey that assessed major depressive disorder and bipolar disorder with the World Health Organization (WHO) Composite International Diagnostic Interview (CIDI) and work impairment with the WHO Health and Work Performance Questionnaire. Among 3378 employees, having major depressive disorder was associated with 27.2 lost workdays per year.³⁸ Consequently, the investigators concluded that the indirect costs associated with depression likely totaled tens of billions of dollars per year.³⁹

Because of the previously noted relationship between depression, chronic pain, and disability, the costs associated with painful conditions among employees warrant attention. Using an employer administrative claims database including approximately 600,000 insured lives, researchers estimated direct costs as total employer medical and medication costs and indirect costs as medically related absenteeism days and disability claims. Among employees with painful conditions, as defined by selected ICD-9 codes, total costs ranged from 1.5 to 3.5 times those for patients of the average employee depending on the painful condition ($P < 0.01$). As with depression, painful conditions are costly to employers, and better management and treatment of such conditions may help reduce the associated employer economic burden.⁴⁰

Quality of Depression Treatment

Despite evidence-based treatment guidelines that have been endorsed by several national professional physician organizations, current patterns of treatment suggest that quality of depression care is suboptimal at several points throughout the treatment process.⁴¹ Among patients in the community and primary care settings, more than 50% of those with depression are not accurately diag-

nosed or prescribed any depression treatment. Of those who are prescribed treatment, more than 50% do not receive adequate dosages of antidepressants and less than 10% receive evidence-based psychotherapy.⁴¹ Even if patients receive antidepressant treatment at appropriate dosages, premature discontinuation either during the acute or continuation phases of treatment significantly contributes to observed suboptimal care. Estimates suggest that about 40% of primary care patients dropout of depression treatment within 6 weeks and less than half are on antidepressants at 6 months. Finally, appropriate follow-up care may be provided to only 20% of patients.^{41,42}

What Factors Contribute to Lack of Quality in Depression Care?

Patient Factors

Patients may not seek care because of the stigma associated with mental health complaints and conditions.⁴³ According to a survey of primary care physicians, more than one-third of patients reluctantly accept the diagnosis of depression.⁴⁴ In a prospective cohort study that screened more than 17,000 patients and enrolled 1336 adults, approximately 23% of the 942 patients who completed all of the follow-up surveys were referred by their primary physicians to mental health specialists. Of those who received a referral from their primary care physician, just over three quarters of patients actually saw a mental health specialist. In regression models, more severe depressive symptoms at baseline, prior visits to a mental health specialist, more years of education, and being younger and female were associated with successful referral and utilization of a mental health specialist.⁴⁵

Patients with depression have emotional, cognitive, and physical symptoms as described in the previous section but they may focus on physical symptoms because of the perception that these represent real, acceptable reasons for presenting to

a physician.³ Patients may also have the experience that physical symptoms, particularly pain, are more likely to engender familial support compared with mental health symptoms. When patients have comorbid depression and chronic pain, the pain complaint may also be likely to be associated with less stigma and less embarrassment about taking time off from work. Those patients who suffer from other chronic medical conditions and comorbid depression tend to amplify physical symptoms and may misidentify depression as secondary to severity of physical symptoms.^{19,46–50}

Delay in seeking care and a focus on physical symptoms on the patient's part contribute to a delay of physicians detecting those patients who might benefit from treatment by identifying the correct diagnosis. An estimated 50% to 80% of patients with DSM anxiety or depressive disorders initially present with physical symptoms, including headaches, chest pain, abdominal pain, fatigue, or worsening chronic medical illness symptoms—which distract the primary care physician from the mental health diagnosis.^{3,51,52} In comparison with patients presenting with psychological symptoms, those presenting with medically unexplained somatic symptoms or symptomatic worsening of chronic medical illness frequently do not receive an accurate diagnosis at the time of their initial presentation.⁵¹

Provider Factors

Responding to chief medical complaints that coalesce as an ambiguous clinical presentation, primary care physicians tend to not consider depression as part of the differential diagnosis early in the course of their evaluation and management; rather they recommend expensive medical testing such as MRIs, angiography, or laparoscopy that can delay arriving at the correct diagnosis and which increase direct medical costs. Moreover, delay in diagnosis can lead to maladaptive illness behavior

such as chronic somatization and invalidism, which has the potential of adversely affecting family and vocational areas of the patients' life.^{17,51,53,54}

Although trends reveal primary care physicians have responded to quality improvement efforts aimed at increasing their use of antidepressant therapy, detailed investigations reveal that most patients started on therapy receive dosages that are lower than those endorsed in evidence-based medicine guidelines.^{55–57} Of note, patients started on newer classes of antidepressants (eg, serotonin reuptake inhibitors) are much more likely to receive therapeutic dosages.^{58,59} Furthermore, with the widespread adoption of newer agents, the type of physician (psychiatrist vs primary care physician) is not associated with being prescribed adequate dosages.

Even when physicians select first line medications and start them at appropriate dosages, the duration of treatment may not be adequate. In primary care practices, roughly one-quarter to one-third of patients discontinue treatment within 1 month of initiating therapy and approximately one-half of patients discontinue treatment within 3 months.^{58–60} Although patient adherence to recommended regimens is part of the issue, physicians have a role in educating patients regarding the importance of taking their medications for enough time to experience the benefits of treatment. The caliber and effectiveness of patient education and self-management training may vary by physician specialty and account for modest differences in continuation rates seen for patients treated in primary care and in mental health specialty care settings.⁴¹ Finally, when compared with evidence-based guidelines, follow-up care—either visits or telephone calls—occurs with much less frequency than recommended. The National Committee for Quality Assurance's Health care Effectiveness Data and Information Set (HEDIS) depression perfor-

mance measures require that patients with depression have three visits in 90 days (one of which can be a telephone follow-up) after antidepressant medications are initially prescribed, but only one in five primary care patients receive this frequency of follow-up.⁶¹ These missed opportunities for contact with patients likely contribute to high discontinuation rates.

Primary care physicians' patterns of antidepressant therapy may reflect a combination of perceived lack of time to treat depression, a lack of interest in managing the condition, or a lack of adequate training.⁴³ For example, while most primary care training programs require residents to gain experience evaluating and managing depression, the degree of proficiency that residents are expected to achieve varies by discipline (eg, family medicine, internal medicine, pediatrics, obstetrics, and gynecology).

Perceived usefulness of obtaining mental health specialty consultation impacts primary care physician reliance upon these potential colleagues and ultimately likely plays a role in whether patients receive appropriate, effective treatment. In a survey of 3375 family physicians, general internists, and obstetrician–gynecologists, respondents overwhelmingly reported being less satisfied with referrals to mental health specialists than to medical sub-specialists. If primary care physicians do not have access to mental health specialists with whom they can successfully manage their patients, then patients may not ultimately receive adequate increases in intensity of care based on persistent symptoms. Furthermore, the above study revealed that even when primary care physicians did identify helpful mental health specialty colleagues, more than half of primary care physicians reported that their patients expressed reluctance to visit a mental health professional.⁴⁴ In contrast, primary care physicians participating in a multisite, randomized controlled trial comparing a primary care-based col-

laborative disease management program for late-life depression with care as usual revealed that positive change may be achieved. This study integrated a team of case managers who were supervised by psychiatrists into primary care clinics. Before the intervention, about half of the participating physicians reported being satisfied with resources to treat patients with depression. After intervention, more than 90% reported that the intervention helped them more effectively treat patients with depression and 82% endorsed that the intervention improved patients' clinical outcomes.⁶²

Clinical Practice and Organizational Factors

In addition to individual physician competencies, the delivery of high-quality care depends in part on the practices and systems that surround the individuals. Our health care system developed and evolved in response to the need to address acute conditions. However, depression represents a chronic condition that requires a different type of service, including but not limited to on-going follow-up through acute, continuation, and maintenance phases of treatment; patient education and activation; close monitoring of clinical response, adherence and side-effects; and appropriate decision support from mental health specialists in the form of consultation or referral.^{63,64} Multiple trials and meta-analyses have demonstrated the value of system level innovations whose presence facilitates and whose absence impedes the provision of high-quality care such as patient and disease registries, information systems, and evidence-based guidelines embedded into the medical record.^{65,66} Two other essential elements for high-quality depression care that are infrequently formally adopted in usual primary care settings include case manager follow-up and stepped care (the latter referring to increasing intensity of mental health care based

on presence of persistent symptoms and constituting one component of the collaborative care model).^{67–70} These will be extensively covered in the following article.

Health Plan and Employer Factors

The necessary system innovations described above are not universally available in part because they require extensive investment and insurers have not incentivized health care systems to develop this infrastructure. Likewise, coordination and communication between primary care and mental health specialty physicians and practices is not reimbursed. Although integrated care organizations that have both primary care and mental health professionals available for patient care like group Health, Kaiser and the US Veterans Administration have been able to overcome these hurdles, depression care outside of these systems remains encumbered. Although integrated care systems that have both primary care and mental health professionals available for patient care must weigh the costs of a single MRI against those of 20 primary care visits or 10 mental health specialty visits and make benefit decisions based on these costs, the health plans that finance care in the rest of the health care sector see investments in the system innovations, like collaborative care programs, as additional costs with uncertain returns. Health care organizations like those noted above have been able to overcome these hurdles by operating within the confines of a fixed budget and deciding to allocate more of their available dollars toward reorganization of care to integrate mental health teams into primary care. By comparison, health plans that finance care delivered outside of integrated systems tend to see investments in innovations like collaborative care programs, as additional costs with uncertain returns and consequently depression care in these systems typically is fragmented, inefficient, and oftentimes ineffectual.

Although seldom directly identified in the context of discussing factors that contribute to gaps in depression care, public and private purchasers of health care are poised to exercise significant influence. Some of these stakeholders remain unaware of the indirect costs of depression in terms of absenteeism and presenteeism and consider mental health benefits for their employees to be poor investments. Such employers might be swayed by the evidence that demonstrates that compared with persistent depression, remission is associated with significantly lower subsequent utilization and costs across the full range of mental health and general medical services.⁷¹ Similarly, employers may be influenced by the emerging evidence about the potential benefits of providing mental health benefits, including increased productivity and decreased absenteeism. The return on investment appears to be quite favorable. In a recent cost-effectiveness analysis, researchers estimated that enhanced depression treatment was associated with a return on investment of 302% during a 2-year period. Furthermore, the return on investment increased in companies that relied on team production, hired more costly substitute labor, or realized penalties for output shortfalls.⁷²

What Should Be Done About the Gaps Between Knowledge and Practice?

A rich literature, including a handful of elegant meta-analyses, on effective interventions and strategies for enhancing depression treatment is accumulating and includes options available to all of the stakeholders.^{65,73,74} The following article on depression carefully addresses applying a population-based approach to depression care to improve diagnosis and treatment. Building on the principles of public health and on the tenets of the chronic illness care model which highlights the importance of self-management support,

delivery system design, decision support, and clinical information systems to achieve productive interactions between informed, empowered patients and their prepared, proactive practice teams, three approaches are required to address the gaps between knowledge and practice: 1) improvement in accuracy of diagnosis; 2) prevention of persistent symptoms that lead to chronic depression; and 3) deterrence of relapse and recurrence among patients who have responded to treatment but are at high risk of relapse, to reduce the mean number of episodes over the life span. Addressing the gaps in depression care requires extensive changes in current practice like universal adoption of stepped collaborative care management models whereby initial treatment is augmented with changes in medication or addition of psychotherapy for those with persistent symptoms and organizational changes to support providing such care.^{67,75,76} Although the investments required to implement these changes are notable, the alternatives are not any more palatable. Without them, we cannot expect to realize the nearly 10% increase in productivity and the 25% reduction in absenteeism that are associated with enhanced depression treatment.⁷⁷

Acknowledgments

This work was supported by the Office of Academic Affairs Veteran's Affairs Women's Health Fellowship and Center HFP 94-028.

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